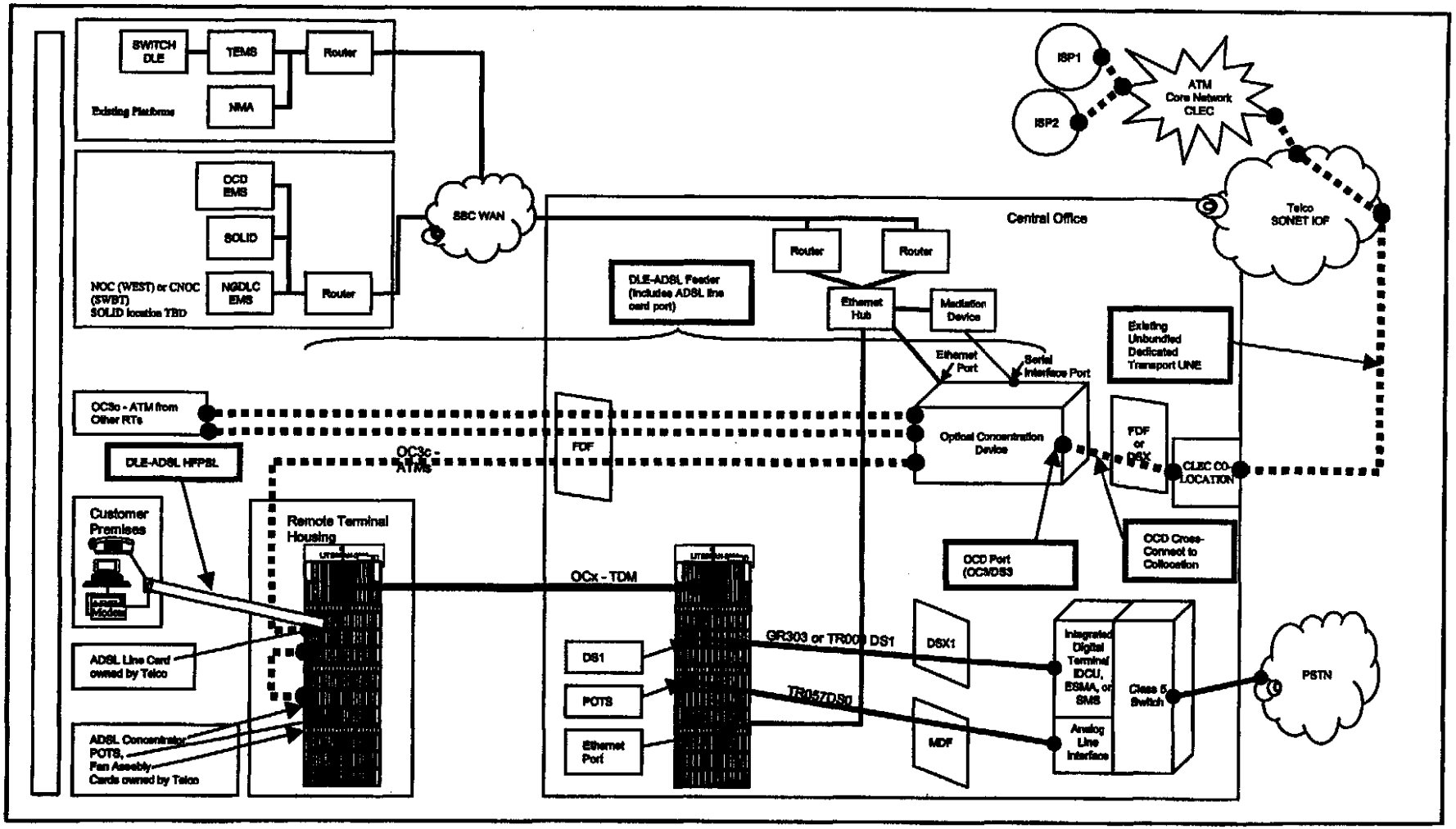
New Technology Introduction

- SBC "Gatekeeper" for new Products & Technology introduced to the Network
  - Provides the "Approval for Use" authorization
  - Follows a documented Phase/Gate process for product and technology ideation, analysis, development, testing, and deployment
- Have been working on SBC Project PRONTO since August, 1999

Broadband Infrastructure

Pronto Basics



Broadband Infrastructure

Pronto Basics

- Completed Approval for Use of Litespan for:
  - 3 Switch Interface Types
    - TR057, TR008, GR303
  - 3 Integrated Switch Products
    - Lucent, Nortel, Siemens
  - 3 Litespan Configurations
    - Point-to-Point, Dual-Feeder, Daisy Chaining
- Completed Approval for Use of OCD for:
  - 2 OCD Vendors
    - Lucent & Cisco
- Completed Approval for Use for New Products:
  - Line-sharing HFPSL
  - Data-only sub loop
  - OCD Port
  - DSL Feeder (or PVC)
  - Still working on combine data/voice products

Broadband Infrastructure

Pronto Basics

- Results
  - Provide two CLEC Sub-loop Options
    - Line-sharing & Data-only
  - Provide two CLEC Access Options
    - DS3 & OC3
  - Expand SBC's deployment options
    - Increase Pronto deployment speed
    - Expand Pronto deployment coverage
      - DSA-by-DSA
      - Wire Center coverage
      - Ameritech

PRONTO Future

- Platforms
  - NGDLC: Litespan, AccessMax
  - OCD: CBX500, 6400 UAC
- Products
  - QoS
  - Multi-PVC
  - DSL Delivery
  - Switch Access
  - Network Management

PRONTO Future - Platform

Alcatel Litespan

- Litespan 2000 & 2012
  - Phase 1:10.2.1 - FOA in progress
    - OA&M Cell Defense
    - Power Management
    - Multiple AA Channels
    - Enhanced Diagnostics
  - Phase 2: 11.0 - 2Q01
    - Quad ADSL
    - G.Lite
    - HDSL2
    - G.shdsl
    - FTP SW Download
  - Phase 3: 12.0 - 1Q02
    - VoDSL
    - Enhanced QoS
    - SVC
- AMS
  - Phase 1a: 3.4 - FOA in progress
    - Remote Software Download & Activation
    - Northbound TL1 Interface
  - Phase 1b: 3.5 - 4Q00
    - 50 concurrent users
  - Phase 2: 4.0 - 2Q01
    - FTP SW Download
    - 100 concurrent users
    - AMS clustering
    - Operational Enhancements
  - Phase 3: 5.0 - 1Q02

PRONTO Future - Platform

AFC UMC1000 AccessMax

- UMC1000 AccessMax 8.0 - 3/01
  - Quad (4+6) ADSL Card
  - OC3 System Bandwidth
  - Native-ATM Backplane
  - CBR QoS
  - VBR-rt QoS
  - G.shdsl
- UMC1000 AccessMax 8.0.x - 2Q01
  - Test Access Enhancement & Alarm Standardization
  - Switchover Time Enhancements

PRONTO Future - Product

Quality of Service

- Quality of Service (QoS)
  - Unspecified Bit Rate (UBR) DSL - Today
    - CLECs specify "Line Profile" for the Modem Sync data rates
      - 8128 kbps Downstream Max
      - 834 kbps Upstream Max
    - No guarantee on bandwidth over that ADSL line
    - High usage could cause service degradation at OCD
      - CLECs monitor their own OCD Port capacity
      - OCD is non-blocking
      - SBC monitors shared-OC3 capacity to RT

PRONTO Future - Product
Quality of Service

- Constant Bit Rate (CBR) DSL - 1H01
  - CLECs still specify a Line Profile
  - CLECs also specify a "Bandwidth Profile" to guarantee a data rate
    - Fixed rate for data transmission
    - Could be symmetric or asymmetric
    - Bandwidth is reserved even if user is not transmitting
  - CBR traffic has high priority
    - CBR traffic will block out UBR traffic during peak usage
    - SBC will monitor and guarantee CBR bandwidth and cell loss
  - Higher cost due to reservation of bandwidth and dedication of shared facilities

PRONTO Future - Product
Quality of Service

- Variable Bit Rate - Real Time (VBR-rt) DSL - 2H01+
  - CLECs still specify a Line Profile
  - Bandwidth Profile is established dynamically, through signaling from CPE, then guaranteed
    - If requested bandwidth cannot be guaranteed, request is denied
  - Bandwidth can be released when not in use
  - VBR traffic has middle priority
    - Guaranteed VBR data rate will block out UBR traffic during peak usage
    - CBR traffic will block out VBR during peak usage
  - Cost models are complex and *could be* based on:
    - Reservation of bandwidth
    - Average bandwidth utilized
    - Bandwidth bursts
  - Availability may be limited by Remote Terminal technology

PRONTO Future - Product

Permanent Virtual Circuits

- Permanent Virtual Circuits (PVC)
  - Single PVC DSL - Today
    - One ATM circuit over ADSL Loop
    - Most current CPE supports only one PVC
  - Multi-PVC DSL - 1H01
    - More than one ATM circuit over ADSL Loop
    - CLEC specifies a Bandwidth Profile for each circuit
    - Each circuit can have a different QoS
    - Future services could each use separate circuit
      - One UBR PVC for data, One CBR PVC for Voice-over-DSL
      - One UBR PVC for data, One VBR-rt PVC for Video Conferencing
      - Multiple UBR PVCs, one for each user on a LAN
      - Multiple CBR PVCs, one for each mission critical application
    - Cost established on a per-PVC basis

PRONTO Future - Product

DSL Delivery

- Full Rate ADSL - Today
  - G.DMT offering
  - Maximum: 8,128 kbps Down, 384 kbps Up
- G.Lite ADSL - 2H01
  - Maximum: 1,544 kbps Down, 384 kbps Up
- G.shdsl - 2H01
  - Maximum: 2.3 Mbps Down, 2.3 Mbps Up
  - Symmetric or Asymmetric
- Limitations
  - Availability may be based upon Remote Terminal technology
  - Vendor offerings may not fully implement technical specification
  - SBC to define CPE interoperability standard processes

PRONTO Future - Product

Switch Access

- GR303 Switch Interface (? Availability ?)
  - Current switch port products are at an individual OE interface
  - New GR303 product would be at a multi-DS1 rate
    - CLEC performs concentration
    - SBC switch would be non-blocking
  - Enables future voice-based services served from data peripherals (i.e VoDSL)
  - Limited availability dependent upon Switch type
  - SBC Telco is *not* offering
    - VoDSL Gateway
    - GR303 unbundling from Remote Terminal

PRONTO Future - Product

Network Management

- Current Model
  - CLEC monitors OCD port at their end of ATM connection
  - CLEC responsible for Bandwidth and VCC management
  - SBC monitors shared network components
    - OCD, RT, shared-OC3
- Customer Network Management (? Availability ?)
  - CLEC View-only access to OCD element manager
    - Port level or Circuit level
  - Canned reports
    - Real-time performance
    - Historical trends
  - Secure, Partitioned, web-based access

PRONTO Future - Product

Other CLEC Offerings

- How can SBC help your business?
  - DSL Delivery Options?
  - Quality of Service Options?
  - Virtual Circuit Options?
  - Others?

PRONTO

BROADBAND INFRASTRUCTURE

Today ... and Tomorrow

Matthew Wallace
Director - New Technology Introduction
Pronto/Access

SBC PROJECT PRONTO
SPECIAL REQUEST PROCESS

October 24, 2000

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SBC PROJECT PRONTO
SPECIAL REQUEST PROCESS

- **SBC Voluntary Commitment:**

  - **<u>Customer-specific requests:</u>**

    - **SBC/Ameritech will provide a process that facilitates requests by a single carrier for deployment of a desired service/functionality.**

    - **Under this process, the telecommunications carrier will submit a sufficiently detailed request for the service/functionality that it wants SBC/Ameritech to deploy.**

    - **Upon receipt of such request, SBC/Ameritech will consider whether to deploy/offer such feature and/or functionality requested by CLEC. The sole discretion to accept or deny such request will reside with SBC/Ameritech.**

SBC PROJECT PRONTO
SPECIAL REQUEST PROCESS

- **Customer Specific Requests:**

- SBC/Ameritech will at least but not limited to the following factors in making decisions regarding CLEC requests:

  - **Technical and Operational Feasibility and Commercial arrangements pertinent to the deployment of such features and functions**

  - **Whether technical, operations support systems and operational trials will be needed**

  - **Whether such features and functions will reduce the capacoty of remote terminals to meet the forecasts demand for Advanced Services and POTS**

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SBC PROJECT PRONTO
SPECIAL REQUEST PROCESS

- **Customer Specific Requests:**

  - The purpose of customer request process is for SBC/Ameritech to identify the market for potential new products, services and/or serving arrangements that may be offered to CLECs over the Project Pronto network architecture such as the following:

    - **Requests for products involving the placement of new vintages of line cards as they become available from the vendor.**

    - **Requests for additional ATM quality of service offerings that are capable of being offered using the existing NGDLC technology.**

    - **Requests for different service arrangements that may or may not be capable and offered over the Pronto architecture.**

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SBC PROJECT PRONTO
SPECIAL REQUEST PROCESS

- **Customer Specific Requests:**

- Upon receipt of each request, in a timely manner, SBC/Ameritech will provide CLECs a detailed responsive quote. The SBC/Ameritech quote will identify the technical feasibility of providing the desired service/functionality, pricing, timing of delivery and other pertinent attributes of the offering that SBC/Ameritech is able to provide in response to the customer's request.

- Process to be used for requesting SBC/Ameritech for deployment of a desired feature/functionality will be similar to the Bona Fide Request (BFR) process that is in place today for unbundled network elements. The process to request features/functions as part of this collaborative effort will be referred to as the Special Request Process.

SBC PROJECT PRONTO
SPECIAL REQUEST PROCESS

- **Customer Specific Requests:**

- All Special Requests must be submitted using the Application Form provided in conjunction with this presentation. (Attached).

- Each request from CLEC shall include the following items:

  - **The desired network and operations functionality;**
  - **Service quality requirements;**
  - **Scope of deployment;**
  - **Demand forecasts/commitments.**

- If CLEC submits the same request in more than one territory (and it requires such request to be different process), a separate Special Request shall be required.

SBC PROJECT PRONTO
SPECIAL REQUEST PROCESS

- **Customer Specific Requests:**

- A CLEC must include the following material with the application:

  1. **Technical Description**
  2. **Drawings**
  3. **Locations to be Deployed**
  4. **Date Required**
  5. **Projected quantity with a 3 year Forecast**

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SBC PROJECT PRONTO
SPECIAL REQUEST PROCESS

- **Customer Specific Requests:**

- CLEC shall be responsible for any costs incurred by SBC/Ameritech to evaluate Special Requests. Should SBC/Ameritech choose to accept such Special Request CLEC will not be held responsible for the initial costs to evaluate the proposed product offering.

- A Special Request can be cancelled at any time with a written notice from the CLEC.

- CLEC will pay its reasonable costs of processing the Special Request up to and including the date of the received notice of cancellation.

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SBC PROJECT PRONTO
SPECIAL REQUEST PROCESS

- **SPECIAL REQUEST TIMELINE:**

  - The following timeline applies for SBC in considering a Special Request:

    - **Upon submittal, SBC will promptly consider and analyze the Special Request.**

    - **SBC to acknowledge receipt of Special Request within 10 Business Days**

    - **Within 45 business days of receipt of the Special Request, SBC will provide to CLEC a Preliminary Analysis, including the following information: SBC to accept or deny request; and if denied, a detailed explanation of the denial.**

SBC PROJECT PRONTO
SPECIAL REQUEST PROCESS

– **SPECIAL REQUEST TIMELINE:**

- **If Preliminary Analysis indicates that SBC/Ameritech will offer the Requested feature/functionality, SBC/Ameritech will send a preliminary price quote to the CLEC as part of the Special Request Preliminary Analysis.**

- **CLEC may provide written authorization for SBC/Ameritech to develop the Product within (30) business days of receipt of the preliminary analysis and quote. If not received in the 30 day timeframe, the Special Request will be cancelled and CLEC will pay SBC costs to produce such price quote.**

- **Should CLEC provide authorization requesting the proposed feature/functionality, SBC/Ameritech will provide the requested feature/functionality as soon as feasible.**

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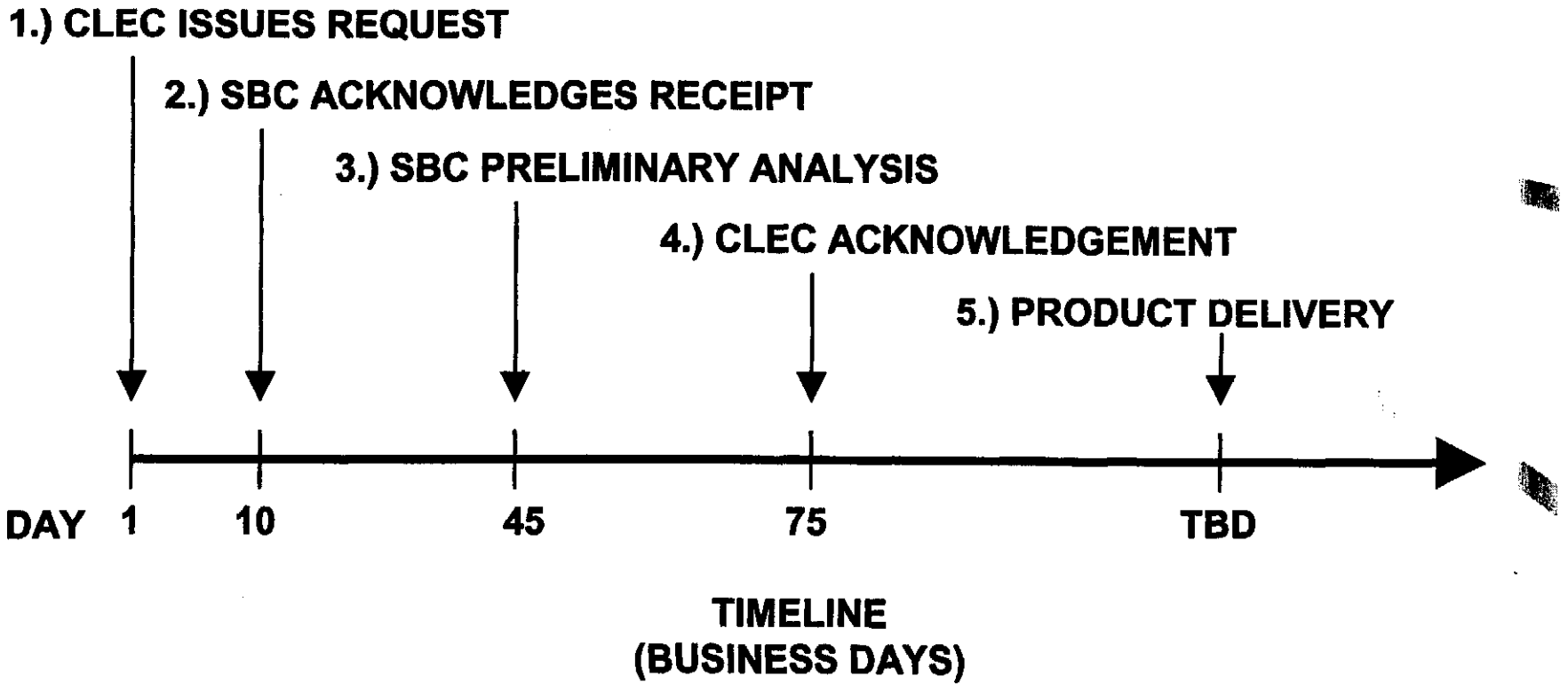
SBC PROJECT PRONTO
SPECIAL REQUEST PROCESS

SPECIAL REQUEST TIMELINE:



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SBC PROJECT PRONTO
SPECIAL REQUEST PROCESS

- If SBC determines that the CLEC proposed product or enhancement is feasible, the following are the high level product development steps that are followed by SBC:

1.) Product Definition

2.) Business Analysis

3.) Development

4.) Integrated Testing

5.) Deployment

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SBC PROJECT PRONTO COLLABORATIVE
SPECIAL REQUEST FORM

Date of Request:

Requester Information

Name:		**Phone Number:**	
Address 1:		**FAX Number:**	
Address 2:		**E-mail Address:**	
City:			
State:			
Zip:		**State for which Request is made**	
Contact Person:			

Feature/Function Requested:

General Comments/ Drawings :

Authorized Signature:
Title:

Provide a technical description of the requested element:

Location (Geographic area, CLLI, etc.)	Estimate of Demand/ Units	3 year forecast	Date Desired

(17)

SBC PROJECT PRONTO COLLABORATIVE
SPECIAL REQUEST FORM

PLEASE BE AS SPECIFIC AS POSSIBLE - THE MORE COMPLETE THE REQUEST, THE FASTER THE REQUEST CAN BE PROCESSED.

Request Comments:

SBC CONTACT INFORMATION:

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Four Bell Plaza (311 S. Akard St.) 1370.04
Dallas, TX 75202

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